

REMARKS

In response to the Office Action dated February 12, 2002 finally rejecting claims 1, 3, 5 - 15 and 27 - 40, Applicants submitted an amendment after final. Claims 1, 3 and 13 were canceled, and claims 5 - 12, 14, 15, and 27 - 32 were amended. In the Advisory Action dated July 16, 2002, the Examiner indicated the amendment would be entered for the purpose of appeal, and further that claims 9, 10, 31 and 32 were allowed, claim 12 was objected to. Claim 11 remained rejected as anticipated by Deweer et al. and claims 5 - 8, 11, 14, 15, 27 - 30 and 33 - 40 remained rejected as unpatentable over Deweer et al., and Albertson et al., or McPherson et al. Applicants assert neither the previous claims nor the present claims are rendered unpatentable by the references when taken alone or in any combination.

Applicants are herein filing a request for a CPA, and with entry of this amendment claims 5 - 10, 12, 14, 15, 27 - 40 and 52 - 57 are pending. Claims 5 - 8, 12, 14 and 27 have been amended, claims 52 - 57 are new, and claim 11 has been canceled. Claims 9, 10, 31 and 32, which were indicated as allowed by the Examiner in the Advisory Action, have been reiterated herein. Additionally, claim 12 which was objected to by the Examiner, has been rewritten as an independent claim incorporating the limitations of now canceled claim 11. Applicants have attached hereto as Appendix II a copy of the status of the claims.

Claim 5 has been amended to clearly indicate that that T89.117D designation for *B. deramificans* is to the microorganism and not the pullulanase. With respect to claims 6 - 8, 14 and 27, the claims have been amended to recite that the truncated pullulanase comprises a deletion from a pullulanase obtainable from *Bacillus deramificans*, wherein the truncated pullulanase is capable of catalyzing the hydrolysis of an alpha-1, 6-glucosidic bond.

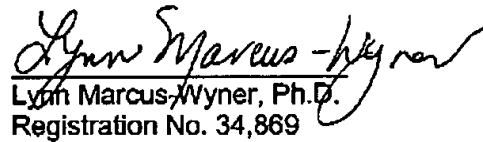
New claims 52, 53 and 54 are dependent on independent claims 6, 7 and 8 respectively and are directed to a mature pullulanase having the sequence shown in SEQ ID NO: 2. Additionally, new dependent claim 55 is directed to an enzymatic composition wherein the deletion is obtained from a pullulanase having the amino acid sequence shown in SEQ ID NO: 2. Claims 56 and 57 are directed to a truncated *Bacillus* produced according to the method of claim 14, wherein the nucleic acid sequence encoding the mature pullulanase is SEQ ID NO: 1 (claim 56) and wherein the mature pullulanase has the sequence shown in SEQ ID NO: 2 (claim 57).

Applicants believe the pending claims are in condition for allowance and issuance of a formal Notice of Allowance at an early date is respectfully requested. If a telephone conference would expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (650) 846-7620.

Respectfully submitted,

Date:

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Appendix I
Version With Markings To Show Changes Made

5. (Thrice amended) The pullulanase of Claim 6, wherein the [*B. deramificans*] pullulanase is obtained from a *Bacillus deramification* having [has] the designation T89.117D in the LMG culture collection.

6. (Thrice amended) A truncated *Bacillus* pullulanase comprising a deletion of about 100 amino acids from the amino terminus of a [*Bacillus*] pullulanase obtainable from *Bacillus deramificans*, [wherein the *Bacillus* is selected from the group consisting of *B. subtilis*, *B. deramificans*, *B. stearothermophilus*, *B. naganoensis*, *B. flavocaldarius*, *B. acidopullulyticus*, *Bacillus* sp APC-9603, *B. sectorramus*, *B. cereus*, and *B. fermus* and] wherein said truncated pullulanase is capable of catalyzing the hydrolysis of an alpha-1, 6-glucosidic bond.

7. (Thrice amended) A truncated *Bacillus* pullulanase comprising a deletion of about 200 amino acids from the amino terminus of a [*Bacillus*] pullulanase obtainable from *Bacillus deramificans*, [wherein the *Bacillus* is selected from the group consisting of *B. subtilis*, *B. deramificans*, *B. stearothermophilus*, *B. naganoensis*, *B. flavocaldarius*, *B. acidopullulyticus*, *Bacillus* sp APC-9603, *B. sectorramus*, *B. cereus*, and *B. fermus* and] wherein said truncated pullulanase is capable of catalyzing the hydrolysis of an alpha-1,6-glucosidic bond.

8. (Thrice amended) A truncated *Bacillus* pullulanase comprising a deletion of about 300 amino acids from the amino terminus of a [*Bacillus*] pullulanase obtainable from *Bacillus deramificans*, [wherein the *Bacillus* is selected from the group consisting of *B. subtilis*, *B. deramificans*, *B. stearothermophilus*, *B. naganoensis*, *B. flavocaldarius*, *B. acidopullulyticus*, *Bacillus* sp APC-9603, *B. sectorramus*, *B. cereus*, and *B. fermus* and] wherein said truncated pullulanase is capable of catalyzing the hydrolysis of an alpha-1,6-glucosidic bond.

12. (Thrice amended) [The pullulanase of Claim 11,] A modified *Bacillus* pullulanase which is capable of hydrolysis of an alpha-1,6-glucosidic bond, wherein the modification is an addition of at least one amino acid to the amino terminus of a mature pullulanase amino acid sequence obtainable from a *Bacillus deramificans*, wherein the additional amino acid at the amino terminus is an [A]alanine.

14. (Twice Amended) A truncated *Bacillus* pullulanase produced by a method comprising the steps of

a) obtaining a recombinant host cell comprising nucleic acid encoding a mature pullulanase said nucleic acid having at least 70% identity to the polynucleotide sequence as shown in SEQ ID NO:1,

b) culturing said host cell under conditions suitable for the production of a truncated pullulanase, and

c) recovering the truncated pullulanase wherein the truncated *Bacillus* pullulanase comprises a deletion of about 100 amino acids from the amino terminus of a *Bacillus* deramificans pullulanase

[wherein the *Bacillus* is selected from the group consisting of *B. subtilis*, *B. deramificans*, *B. stearothermophilus*, *B. naganoensis*, *B. flavocaldarius*, *B. acidopullulyticus*, *Bacillus* sp APC-9603, *B. sectorramus*, *B. cereus*, and *B. fermus*] and said truncated pullulanase is capable of catalyzing the hydrolysis of an alpha-1,6-glucosidic bond.

27. (Twice amended) An enzymatic composition comprising a truncated *Bacillus* deramificans pullulanase wherein said truncated pullulanase is selected from the group of pullulanases consisting of

a) a deletion of up to about 100 amino acids from the amino terminus of a *Bacillus* deramificans pullulanase,

b) a deletion of up to about 200 amino acids from the amino terminus of a *Bacillus* deramificans pullulanase, and

c) a deletion of up to about 300 amino acids from the amino terminus of a *Bacillus* deramificans pullulanase,

[wherein the *Bacillus* is selected from the group consisting of *B. subtilis*, *B. deramificans*, *B. stearothermophilus*, *B. naganoensis*, *B. flavocaldarius*, *B. acidopullulyticus*, *Bacillus* sp APC-9603, *B. sectorramus*, *B. cereus*, and *B. fermus* and] wherein said truncated pullulanase is capable of catalyzing the hydrolysis of an alpha-1,6-glucosidic bond.